



EXPERIENTI@



**LABIOME P-UP / FADEUP - UNIVERSITY OF PORTO (PORTUGAL)**

## Training Evaluation and Advice in Swimming

This module will focus on Training Evaluation and Advice of competitive swimmers, including anthropometry, physiology, force production and balance, biomechanics and technique. The activities will take place during a training camp of part of the Portuguese Junior National Team at the University of Porto and participants will be able to be enrolled in data collections, as well as in data processing and reporting to coaches and swimmers.

Participants are invited to travel to Porto on the 11<sup>th</sup> April to be able to attend the welcome session at 9 a.m. of the 12<sup>th</sup>. The Faculty has a low-cost restaurant at the participants disposal, with schedules well-coordinated with the activity to be developed in the module.

There is an IBIS HOTEL just in front of the Faculty (with good prices) and other hotel facilities are located at less than 15 min walk distance.

### April 11<sup>th</sup> - Travel to Porto

**April 12<sup>th</sup> – [Wednesday] 09.00 – 10.00 Reception and visit to LABIOME P-UP and to FADEUP.**

**April 12<sup>th</sup> – [Wednesday] 10.00 – 13.00 Data collection**

Swimmers ( $n=9$ ) will be divided into groups *a* and *b* (with five and four swimmers, respectively). *Gr.A* will start at the LABIOME P with anthropometry and force production (at an Isokinetic dynamometer and in countermovement jump), with *Gr.B* starting at the pool with tethered force production, mechanical velocimetry and video records. At 11:30, groups will change from the lab to the pool (and vice-versa).

**April 12<sup>th</sup> – [Wednesday] 13.00 – 14.00 Lunch break**

**April 12<sup>th</sup> – [Wednesday] 14.00 – 18.00 Data collection**

Both groups will be tested at the pool. *Gr.A* will start with physiological assessment (5x200m progressive, with 30s int) for individual anaerobic threshold (iANT) and  $VO_2$ max assessment, while *Gr.B* will be assessed in the *startmeter* to define the best ventral start backplate positioning. At 16:00, groups will change testing stations.

**April 12<sup>th</sup> – [Wednesday] 18.00 – 20.00 Data processing / swimmers' training**

**April 12<sup>th</sup> – [Wednesday] 20.00 – ... free time**

**April 13<sup>th</sup> – [Thursday] 09.00 – 11.00 Data processing / swimmers' training**

**April 13<sup>th</sup> – [Thursday] 11.00 – 13.00 Discussing video footages with swimmers and coaches**

**April 13<sup>th</sup> – [Thursday] 13.00 – 14.00 Lunch break**

**April 13<sup>th</sup> – [Thursday] 14.00 – 15.00 Discussing video footages with swimmers and coaches**

**April 13<sup>th</sup> – [Thursday] 15.00 – 17.00 Final discussion**

**April 13<sup>th</sup> – [Thursday] 17.00 - ... free time**

**April 14<sup>th</sup> – [Friday] Free time and travelling back home**

### **@LABIOMEUP-UP**

#### Anthropometry

- Body composition through bioimpedance
- 3D body geometry extraction
- Linear dimensions
- Perimeters and diameters

#### Force production (dryland)

- Countermovement jump
- Isokinetic testing
  - o Upper limbs – 10 x internal (concentric) / external (concentric) rotations of the shoulder for maximal and mean torque assessment and balance study

### **@FADEUP SWIMMINGPOOL**

#### Biomechanical assessment

#### Force production (water)

- Tethered force 30s test

#### Velocity variation & video records

- 25m sprint with a speedometer

#### Startmeter testing (force/time records and video footage)

- 6x15m Int. > 2min, sprint from the starting block, two in the preferred, forward and rear backplate positions

#### Physiological assessment

- 5x200m, with 0.05m/s increases per step (with 30s intervals), for  $iANT$  and  $v@iANT$  determination (using  $[La^-]$ ), as well as for  $VO_2max$  and  $v@VO_2max$  and assessment.

JPVB